

WASHINGTON STATE DEPARTMENT OF HEALTH

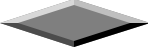
FIRE ALARM SYSTEMS

AUDIBLE AND VISIBLE ALARMS

The Washington State Department of Health encourages the use of audible and visible alarms in patient use areas that are modified to suite standard health care design practice. The use of horn/strobes is generally not compatible with standard health care design practice.

The purpose of a fire alarm system activation in hospitals, nursing homes, and special care units of boarding homes is to notify staff and the fire department. Generally, the “protect in place” concept is used in the initial stages of a fire incident. Only those patients in the room of fire origin are initially evacuated, and then only to the corridor. Should the need arise, horizontal evacuation may be employed, where patients are moved to a different smoke compartment on the same floor. In extreme cases, vertical evacuation may be employed, where patients are moved one or two floors below the floor of fire origin. Only in disastrous situations would total evacuation occur.

The activation of horn/strobes in patient occupied areas serves to unnecessarily excite, and in many cases, potentially harm patients. Therefore, the Department of Health, with the concurrence of the local authority, encourages the use of chimes or like devices and incandescent visible alarms in patient use areas.



Uniform Building Code, Washington State Amendments Requirements:

“1105.4.9 Alarms. Where provided, alarm systems shall include both audible and visible alarms. Visible alarm devices shall be located in all assembly areas; common-use areas, including toilet rooms and bathing facilities; hallways and lobbies; and hotel guest rooms as required by Section 1103.1.8.3

EXCEPTIONS: 1. Alarm systems in Group I, Division 1.1 and 2 Occupancies may be modified to suit standard health care design practice.

2. Visible alarms are not required in Group R, Division 1 apartment buildings.”

“1106.15.1 Audible alarms. Audible alarms shall produce a sound in accordance with the Fire Code.

1106.15.2 Visible alarms. Visible alarm signal appliances shall be integrated into the building or facility alarm system. Where single-station audible alarms are provided, single-station visible alarm signals shall be provided.

EXCEPTION: Dwelling units in Group R, Division 1 apartment buildings.

Visible alarms shall be located not less than 80 inches (2030 mm) above floor level, or 6 inches (152 mm) below the ceiling, whichever is lower, and at an interval of not more than 50 feet (15 m) horizontal, in rooms, corridors, and hallways.

In rooms or spaces exceeding 100 feet (30m) in horizontal dimension, with no obstructions exceeding 6 feet (1830 mm) in height above the finished floor, visible alarms may be placed around the perimeter at intervals not to exceed 100 feet (30m) horizontally.

Visible alarm signals shall comply with the following criteria:

1. *The lamp shall be a xenon strobe type or equivalent.*
2. *The color shall be clear or unfiltered white light.*
3. *The maximum pulse duration shall be two-tenths of one second (0.2 sec) with a maximum duty cycle of 40 percent. The pulse duration is defined as the time interval between initial and final point of 10 percent of maximum signal.*
4. *The intensity shall be a minimum of 75 candela.*
5. *The flash rate shall be a minimum of 1 Hz and a maximum of 3 Hz.*

1106.15.3 Access to manual fire alarm systems. Manual fire alarm devices shall be mounted not more than 54 inches (1370 mm) above the floor where a parallel approach is provided.”

Uniform Fire Code Requirements:

“1007.2.7.1.2 Patient room smoke detectors. Smoke detectors which receive their primary power from the building wiring shall be installed in patient sleeping rooms of hospital and nursing homes. Actuation of such detectors shall cause a visual display on the corridor side of the room in which the detector is located and shall cause an audible and visual alarm at the respective nurses’ station. When single-station detectors and related devices are combined with a nursing call system, the nursing call system shall be listed for the intended combined use.

EXCEPTION: In rooms equipped with automatic door closers having integral smoke detectors on the room side, the integral detector may substitute for the room smoke detector, provided it performs the required alerting functions.”

Uniform Fire Code, Washington State Amendments Requirements:

“1007.2.12.10.1 General. Alarm systems in buildings which are required to have accessible building facilities shall include both audible and visible alarms. All devices shall be listed or approved. The alarm devices shall be located in all accessible sleeping accommodations and common use areas, including toilet rooms and bathing facilities, hallways, and lobbies.

EXCEPTIONS: 1. Alarm systems in Group I, Division 1.1 and 1.2 Occupancies may be modified to suit standard health care design practice.

2. *Visible alarms are not required in Group R, Division 1 apartment buildings.*

“1007.2.12.10.2.1 Audible alarms. Audible alarms shall produce a sound in accordance with UFC Standard 10-2. Audible alarms shall exceed the prevailing equivalent sound level in the room or space by at least 15 decibels, or shall exceed any maximum sound level with a duration of 30 seconds by 5 decibels, whichever is louder. Sound levels for alarm signals shall not exceed 120 decibels.

1007.2.12.10.2.2 Visible alarms. Visible alarm signal appliances shall be integrated into the building or facility alarm system. All devices shall be listed or approved. Where single-station audible alarms are provided, single-station visible alarm signals shall be provided.

EXCEPTION: Visible alarms are not required in Group R, Division 1 apartment buildings.

Visible alarms shall be located per nationally recognized standards. NFPA 72, 1993 edition, and ANSI 117.1, 1992, shall be considered equivalent facilitation.

1007.2.12.10.2.3 Access to manual fire alarm systems. Manual fire alarm devices shall be mounted at least 36 inches (914.4 mm) and not more than 54 inches (1371.6 mm) above the floor where a parallel approach is provided. Where a parallel approach can not be provided the height shall not exceed 48 inches (1219.2 mm)."

"1007.3.3.3.4 Visual alarms. Alarm systems shall include both audible and visual alarms. Alarm devices shall be located in hotel guest rooms as required by the Building Code (see U.B.C. Washington State Amendments, Section 1105.4.9); accessible public- and common-use areas, including toilet rooms and bathing facilities; hallways; and lobbies. (See U.B.C. Washington State Amendments, Section 1106.15.2, for additional information about visual signals.)"